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IN THE CLAIMS:

Claim 1 (currently amended): An ultrasonic diagnostic apparatus for obtaining volume data made of voxel values for voxels forming a three-dimensional space by transmitting and receiving ultrasound to and from the three-dimensional space containing a target tissue and for applying a data process with respect to the volume data, the ultrasonic diagnostic apparatus comprising:

an isolated group extractor for extracting a plurality of isolated groups corresponding to the target tissues in the volume data;

a basis axis setter for setting a basis axis in ~~the target tissue based on a characteristic of the target tissue~~ a specific isolated group based on a shape of the specific isolated group included in the plurality of isolated groups in the volume data;

a reference cross section setter for setting, ~~with respect to the target tissue,~~ a plurality of reference cross sections ~~which intersect~~ each having a different rotational angle from each other, with the basis axis as ~~a reference~~ an axis of rotation, in the volume data;

a basis cross section selector for selecting a basis cross section from among the plurality of reference cross sections based on a cross sectional characteristic of the target tissue in each of the reference cross sections set in the volume data;

a cross sectional image former for forming a cross sectional image of the target tissue based on the volume data, the cross sectional image corresponding to one of cross sections set with the basis cross section as a reference and the basis cross section; and

a means for displaying said cross sectional image.

Claim 2 (currently amended): The ultrasonic diagnostic apparatus according to Claim 1, wherein

the basis axis setter sets the basis axis based on two characteristic points of the ~~target tissue~~ specific isolated group.

Claim 3 (currently amended) The ultrasonic diagnostic apparatus according to Claim 1, wherein

the basis axis setter sets the basis axis based on a center of mass of the ~~target tissue~~ specified isolated group and one characteristic point of the ~~target issue~~ specified isolated group other than the center of mass.

Claim 4 (currently amended): The ultrasonic diagnostic apparatus according to Claim 1, wherein

the basis axis setter sets the basis axis based on the center of mass of the ~~target tissue~~ specified isolated group and an end, in the ~~target tissue~~ specified isolated group, which is furthest away from the center of mass.

Claim 5 (original): The ultrasonic diagnostic apparatus according to Claim 1, wherein

the reference cross section setter sequentially rotates a specific plane containing the basis axis by a predetermined angle with the basis axis as an axis of rotation to set the planes formed in each rotational angle position as the plurality of reference cross sections.

Claim 6 (original): The ultrasonic diagnostic apparatus according to Claim 1, wherein

the basis cross section selector calculates an area of a cross section of the target tissue in each reference cross section and selects, as the basis cross section, a reference cross section having a maximum cross sectional area or a minimum cross sectional area.

Claim 7 (original): The ultrasonic diagnostic apparatus according to Claim 1, wherein the basis cross section selector calculates a peripheral length of the target tissue in each reference cross section and selects, as the basis cross section, a reference cross section in which a longest peripheral length or a shortest peripheral length can be obtained.

Claim 8 (currently amended): An ultrasonic diagnostic apparatus for obtaining volume data made of voxel values for voxels forming a transmission space by transmitting and receiving ultrasound to or from a heart having four cavities including a left ventricle cavity and for applying a data process to the volume data, the ultrasonic diagnostic apparatus comprising:

a major axis setter for setting a left ventricle major axis based on the shape of the left ventricle cavity selected from the four cavities in the volume data;

a reference cross section setter for setting a plurality of reference cross sections each having a different rotational angle from each other in the volume data, with the left ventricle major axis as an axis of rotation;

a basis cross section selector for selecting a basis cross section from among the plurality of reference cross sections based on a size of a cross section of the four cavities in each of the reference cross sections set in the volume data;

a cross sectional image former for forming a cross sectional image corresponding to at least one of a four-cavity cross section, a two-cavity cross section, and a minor-axis cross section, all of which relate to the heart, based on the volume data and the basis cross section; and

a means for displaying said cross sectional image.

Claim 9 (original): The ultrasonic diagnostic apparatus according to Claim 8, further comprising:

a binarization section for separating the voxels into cavity tissue voxels and real tissue voxels to create binarized volume data;

a cavity group extractor for extracting a plurality of cavity groups each made of a plurality of cavity tissue voxels based on the binarized volume data; and

a left ventricle cavity selector for selecting a left ventricle cavity group corresponding to the left ventricle cavity from among the plurality of cavity groups, wherein

the major axis setter judges the shape of the left ventricle cavity based on the left ventricle cavity group.

Claim 10 (original): An ultrasonic diagnostic equipment according to Claim 8, wherein

the basis cross section selector calculates a cross sectional area of the four cavities in each of the reference cross sections and selects, as the basis cross section, a reference cross section in which a maximum cross sectional area can be obtained, and

the cross sectional image former sets the basis cross section as the four-cavity cross section.

Claim 11 (original): The ultrasonic diagnostic device according to Claim 10, wherein

the two-cavity cross section is a cross section which is orthogonal to the basis cross section and which contains the left ventricle major axis.

Claim 12 (original): The ultrasonic diagnostic apparatus according to Claim 10, wherein

the minor-axis cross section is a cross section which is orthogonal to the left ventricle major axis and which contains a center of mass of the left ventricle cavity.

Claim 13 (original): The ultrasonic diagnostic apparatus according to Claim 8, further comprising:

a three-dimensional image former for forming a three-dimensional image in which at least one cursor indicating at least one of the positions of the four-cavity cross section, the two-cavity cross section, and the minor-axis cross section is displayed on a stereographical image of the heart obtained based on the volume data.

Claim 14 (currently amended): An ultrasonic diagnostic apparatus for obtaining, from an ultrasonic probe for transmitting and receiving ultrasound to and from a transmission space containing a heart, volume data made of voxel values of voxels forming the transmission space, and for applying a data process to the volume data, the ultrasonic diagnostic apparatus comprising:

a major axis setter for setting a left ventricle major axis based on a shape of a left ventricle cavity selected from the four cavities of the heart in the volume data;

a reference cross section setter for setting a plurality of reference cross sections each having a different rotational angle in the volume data, with the left ventricle major axis as an axis of rotation;

a basis cross section selector for selecting a basis cross section from among the plurality of reference cross sections based on a size of a cross section of the four cavities in each of the reference cross sections set in the volume data;

a cross sectional image data former for forming, based on the volume data and the basis cross section, image data of a cross sectional image corresponding to at least one of

a four-cavity cross section, a two-cavity cross section, and a minor-axis cross section regarding the heart; and a means for displaying said image data.

Claim 15 (original): The ultrasonic diagnostic apparatus according to Claim 14, further comprising:

a binarization section for separating the voxels into cavity tissue voxels and real tissue voxels to create binarized volume data;

a cavity group extractor for extracting, based on the binarized volume data, a plurality of cavity groups each made of a plurality of cavity tissue voxels; and

a left ventricle cavity selector for selecting a left ventricle cavity group corresponding to the left ventricle cavity from among the plurality of cavity groups, wherein

the major axis setter judges a shape of the left ventricle cavity based on the left ventricle cavity group.

Claim 16 (original): The ultrasonic diagnostic apparatus according to Claim 15, wherein

the basis cross section selector calculates a cross sectional area of the four cavities in each of the reference cross sections and selects, as the basis cross section, a reference cross section in which a maximum cross sectional area can be obtained, and

the cross sectional image former sets the basis cross section as the four-cavity cross section.

Claim 17 (original): The ultrasonic diagnostic apparatus according to Claim 16, wherein

the two-cavity cross section is a cross section which is orthogonal to the basis cross section and which contains the left ventricle major axis.

Claim 18 (original): The ultrasonic diagnostic apparatus according to Claim 17, wherein

the minor-axis cross section is a cross section which is orthogonal to the left ventricle major axis and contains a center of mass of the left ventricle cavity.

Claim 19 (original): The ultrasonic diagnostic apparatus according to Claim 18, further comprising:

a three-dimensional image data former for forming image data of a three-dimensional image in which at least one cursor indicating at least one of the positions of the four-cavity cross section, the two-cavity cross section, and the minor-axis cross section is displayed on a stereographical image of the heart obtained based on the volume data.